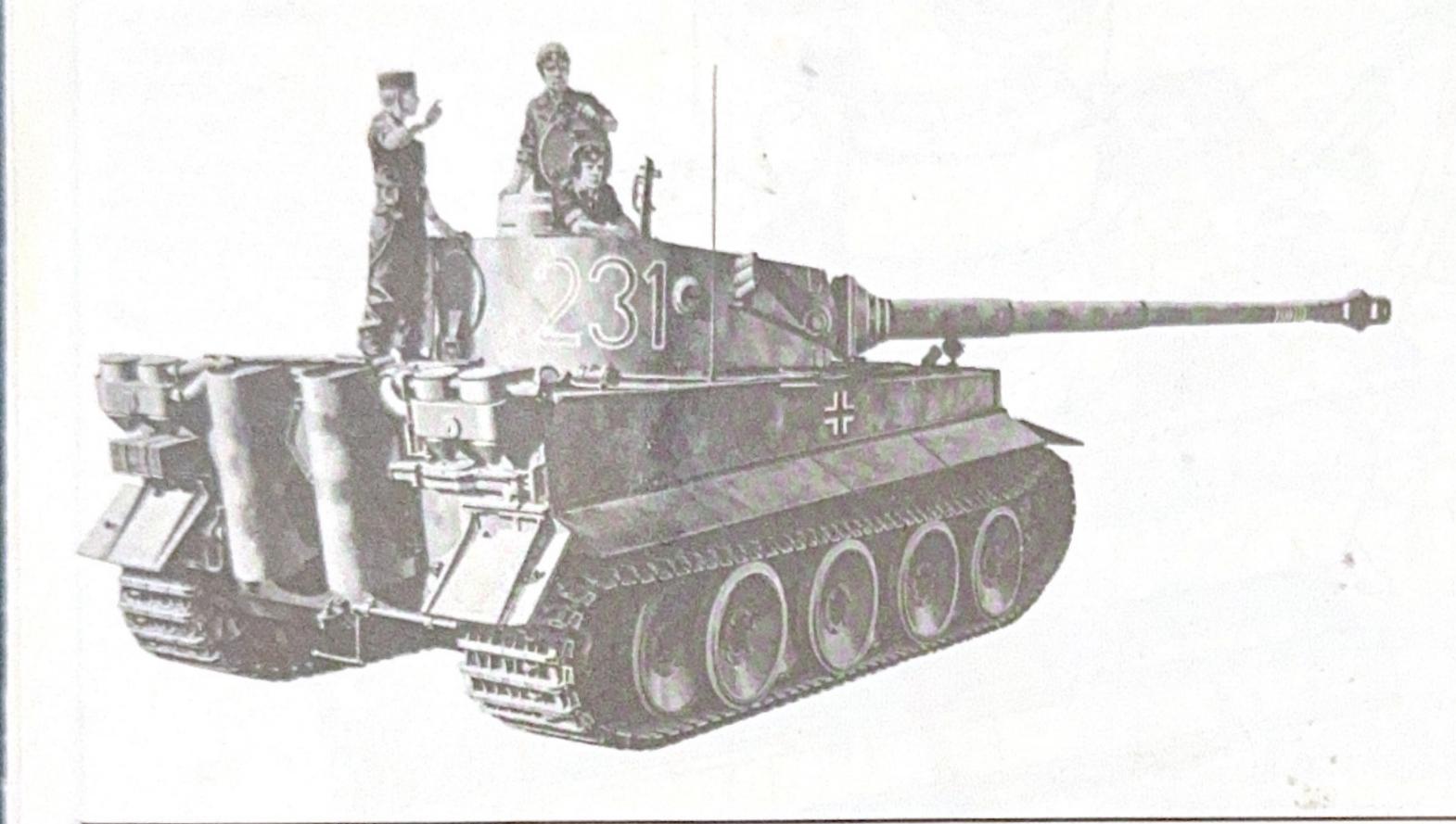
GERMAN PANZERKAMPFWAGEN VI TIGER I (SD.KFZ.181) AUSFUEHRUNG E

TAMIYA



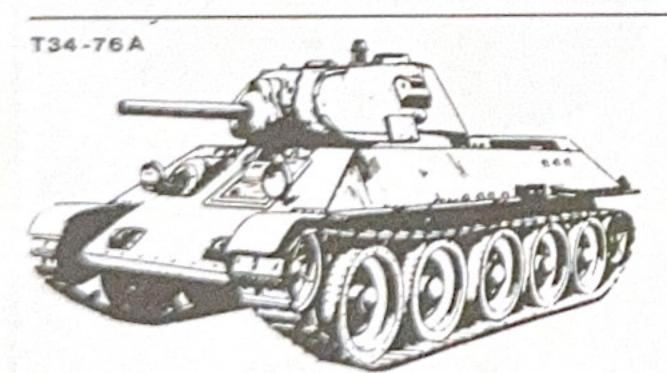
History of the Tiger I tanks

Development of what eventually became known as the

'Tiger' Ausf. E., was initiated in a discussion with Hitler on 26th May, 1941.

Hitler had been impressed by the reports of the armour of the British Matilda and the French tanks, and wanted a heavier tank than the Pz.Kpfw IV to spearhead panzer attacks.

Whilst various medium and heavy tanks had



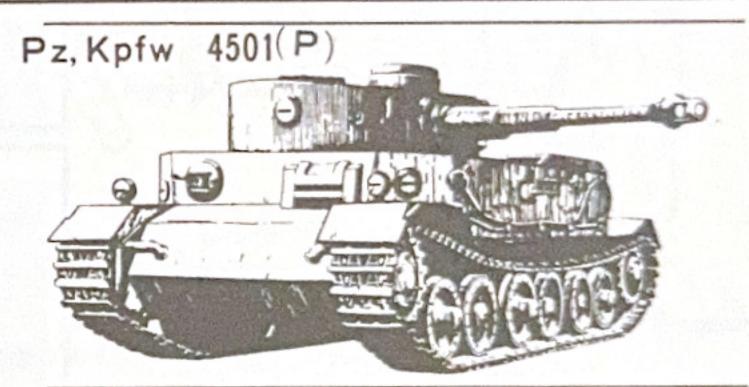
been under development in Germany since 1937, no immediate plans were in hand to supersede or augment the PzKpfw III and IV owing to the satisfaction felt with them. Within a week of the invasion of Russia on 22nd June 1941 the German forces came into contact with the Soviet Medium T.34 and heavy KV. I tanks. Both Russian tanks outclassed anything the Germans had, either in the field, or under development, and it was this which gave the impetus to implement Hitlers recommendations as quickly as possible.

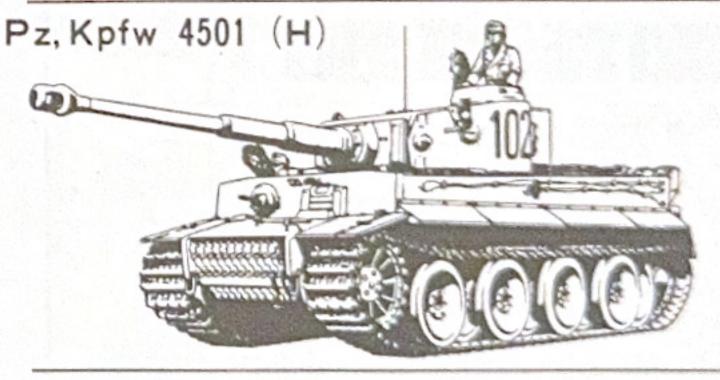
The demand was for a tank mounting a gun capable of pentrating 100mm (approx. 4") of armour plate at 1500 meters (1640 yards); this tank, in accordance with current German practise, to have frontal armour capable of withstanding attack by a similar weapon. The gun advocated was an adaption of the highly successful 8.8 cm Flak 36, but the

Ordnance Department were in favour of a smaller calibre weapon of either 6cm or 7.5 cm provided similar A/P performance could be obtained. By utilizing a smaller calibre gun the total size, and therefore the weight, of the projected vehicle could be lower.

Whilst the performance of the 8.8 c.m. Flak 36 was known, the smaller calibre gun still had to be developed. The arguments in favour of a smaller tank were so self-evident however that it was decided to issue two separate specifications. The one given to Henschel designated VK 3601 (VK-Vollkettenhraftfahrzeug-fully tracked motor vehicle) being for a 36/40 ton tank to be armed with the tapered bore weapon 0725. The one given to Porsche was for a 45 ton tank to be armed with the 8.8 cm KwK and was designated VK. 4501. Separate turrets for both designs were ordered from Krupp.

Because of the shortage of tungsten steel essential for taper bore guns, Hitler ordered their elimination, including the weapon 0725. A total of only seven VK 3601 prototypes were therefore produced, the last of these appearing in April 1942. With the cancellation of the weapon 0725, and in order to enable Henschel to produce a tank with the requisite fire power within the alloted time, it was decided to utilise the turret and gun developed by Krupp under the supervision of Professor Porsche for the VK. 4501 on the VK 3601 as well. A point of interest about this turret is that the sides and rear were formed from a single plate of armour 82 mm (34") thick bent round into the shape of a horse shoe. Owing to this turret having a ring diameter of 6'-1" (185 cm) against the





5'-5" (165 cm) ring diameter of the VK 36 01 Henschel was forced to alter their chassis to accommodate it. This was done by widening the hull above the tracks thus changing the section from a rectangular form to a 'T' shape. Due to these chassis alterations, the heavier gun, and heavier turret, the weight of the vehicle was increased considerably, and the designation was therefore changed to VK. 4501 (H). This new project vehicle had the same main components such as transmission, final drive, and roadwheels as were developed for the VK. 3601.

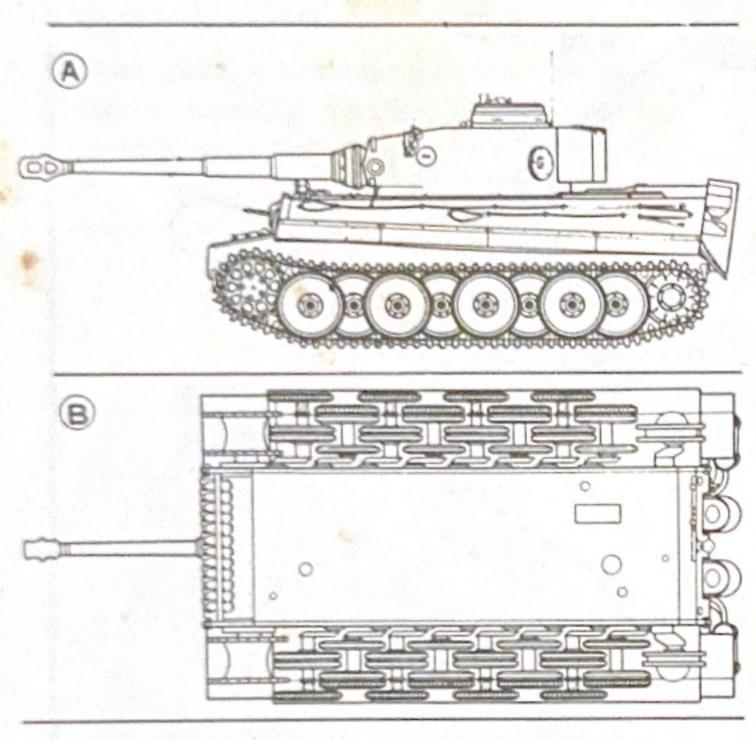
During development of the VK. 4501 (H) two versions were contemplated. The VK 4501 (H) which was as built with the Krupp turret mounting the 8.8 cm KwK36, and the VK. 4501 (H2) which was to have had a Rheinmetall designed turret mounting the 7.5 cm KwK 42 (L/70). This second version was never built.

By the middle of 1941 Henschel had made

preparations for production of 60 vehicles and even before a prototype was finished they had increased their preparations to cover a further 1300.

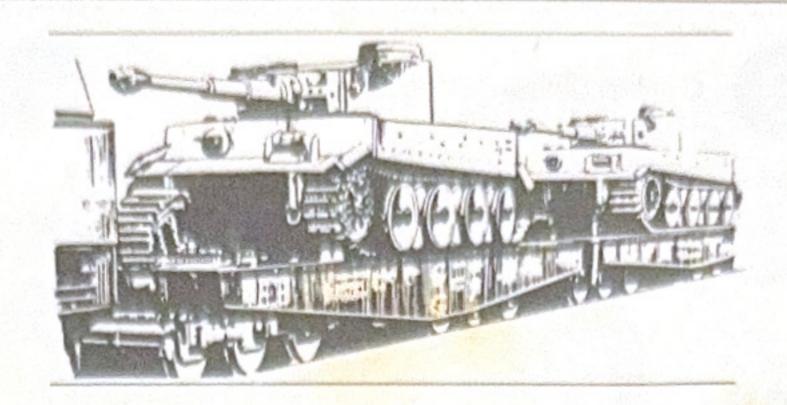
The first prototypes of the VK. 4501(H) and VK. 4501(P) underwent their first competitive trials at Rastenburg in front of Hitler on his birthday the 20th April, 1942. The results of these, and subsequent trials were supposed to have shown that the Henschel vehicle was superior, thus production orders were placed for it. The Porsche vehicle, known colloquially within the firm as 'Tiger' now drops out of the picture as a battle tank, although the chassis of the 90 already ordered by Hitler and under construction were eventually adapted as the Panzer Jaeger Elefant'.

Actual production of the Pz. Kpfw 4501(H) commenced in August 1942 with twelve units a month. On Hitlers insistence, production was improved, so that by November 1942 the rate had reached 25 units per month. This increase continued and a maximum monthly output of 104 was obtained in April 1944. Production ceased in August 1944 after a total of 1355 had been built including prototype.

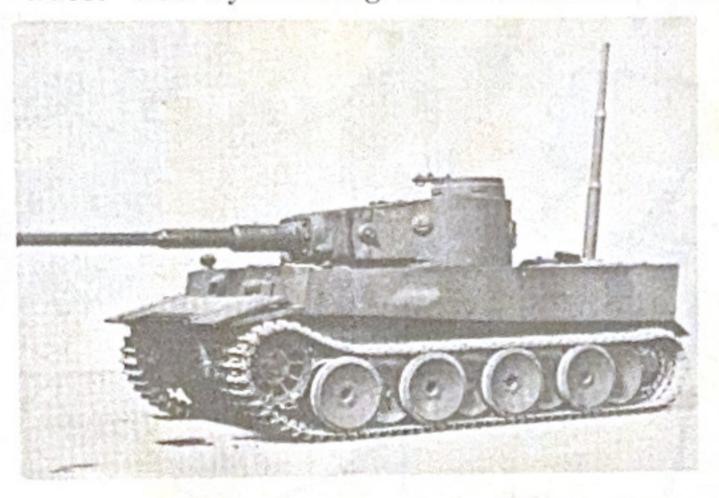


The designation Pz.Kpfw Vl was eliminated through Hitlers order of 27th February 1944, the official designation from then on becoming Pz. Kpfw 'Tiger' Ausf. E. which had in fact. appeared on official documents prior to this. The page consisting of the two view draw. ings shows a fairly eary production model (Chassis No.250122) fitted with full equipment and battle tracks. As mentioned preeviously, in order to reduce the width for transportation purposes, the outer wheel of each set of three (shown shaded in the underneath view of the same vehicle) was removed, narrow tracks were fitted, the outer portions of the front and rear mud flaps were hinged upwards, and the side mud guards removed entirely. Normal ground pressure using battle tracks was 14.7 lbs per square inch, but on transportation tracks the ground pressure rose to 20.4 lbs sq".

In view of the size and weight of these vehicles it was envisaged that difficulties—would be met in crossing rivers by normal methods, for even in Germany not many bridges were officially of capable of carrying their



weight. The original specification therefore included equipment to enable them to submerge up to depths of approximately 13 feet (4 metres) and cross on the bed of rivers. There is no evidence to prove that this feature was ever used in action, tank crew being very reluctant to go under water. When one considers that all hatches opened outwards, and that an engine failure would trap the crew with no fresh air being circulated, their fears were justifiable. After 495 vehicles had been built submersing equipment was discontinued, not even all of the 495 had it fitted. For submersion all hatches, ventilators, vision ports, gun mantlet etc., could be sealed relatively simply. A pneumatic tube was inflated to seal the turret ring, and a telescopic snorkel pipe was raised from the rear of the engine compartment. This pipe supplied fresh air, which first passed through the crew compartment, and was then utilised by the engine. Cooling of the engine underwater was by flooding of the radiator com-



partments after the fans had been disconnected. These fan compartments were positioned both sides of the engine compartment and sealed off from it. Clapper valves were fitted to the exhausts, but back pressure from the engine was relied on to keep water out.



Hitler ordered in July 1942 that the first

'Tiger' Company was to be ready for action by September at the latest. This was against the advice of his Panzer experts and Generrals, who wanted it to be throughly tested, crews trained, and them used for a massed attack in a Spring offensive in 1943. Following Hitlers orders the first company of 'Tigers' were used in action on the 23rd September 1942 in a secondary operation, in unsuitable tank country consisting of swampy forests near Leningrad. Here they were forced to move in single file along the roads which the Russians had covered with considerable numbers of well concealed heavy antitank guns. The results of this was heavy casualties among the 'Invincible' new 'Tigers' and complete loss of secrecy and the surprise that could have been effected the following Spring. Even worse was the fact that due

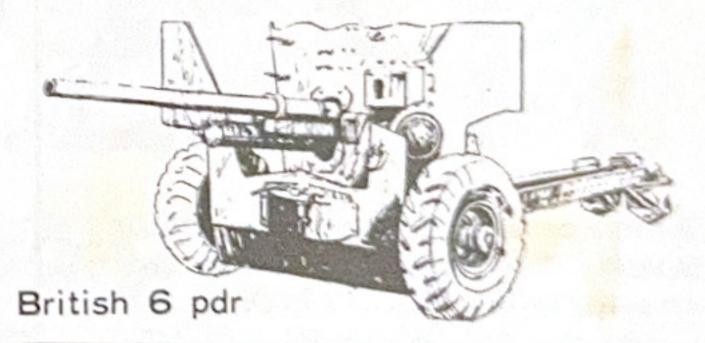
to the weather and terrain the objective of this attack was not even gained despite the cost. The introduction of the 'Tiger' was therefore a repetition in its way of the introduction of the British Mk.1 tanks on September 15th 1916. After this debut 'Tigers' appeared in North Africa in April, 1943, Sicily, Italy, and North West Europe, continuing as fighting tank up to the end of the war. 'Tiger, Battalions were originally organised as independent units under G.H.Q. troops. Later it was decided to include 'Tiger' tanks in the basic organization of German Armoured Divisions, but this never took place except with certain S.S. Panzer Corps.

At the time of its introduction the 'Tiger' Ausf. E. was the most powerful tank anywhere in the world. Workmanship was of a very high order, and the transmission and steering were extremely complicated, requiring many man hours to produce. Some justification for the fully regenerative steering and eight forward ratios in the gearbox, which was fully automatic, was that the vehicle was very light to control. Whilst first class crews were available the 'Tiger' was an efficient tank, but as the standard of training dropped so the mechanical failure rate increased. The main drawbacks, apart from the difficulties of transportation, were a short range of action, due to a fuel consumption of 23 gals. per mile, and a slow turret traverse. Whilst the turret traverse was normally hydraulic, in case this became inoperative hand traverse wheels were provided for both the Commander and Gunner. A factor which had nothing to do with the design or construction of the 'Tiger', but which tended to hamper its use, was a High Command Order that they were not to be allowed to fall into enemy hands.

fensive tank, their lack of mobility and the changing strategy of the war led to them being used and more as a definsive weapon. In this role they were formidable, being used more and more as a defensive weapon. In this role they were formidable, being com-

pletely impervious "Head On" to the British

Although the original idea was for an of-



6pdr., American 75 mm, and Russian 76 mm although the British 6 pdr could effect side penetration at close range. Until the advent of High velocity ammunition for the 6pdr. and the American 76 mm. and the introduction of the Russian 100 mm and 122 mm guns however the Tigers frontal armour was considered shot resistant.

The engine used on the 'Tiger' Ausf. E. was a development by Maybach of their range of 12 cylinder Vee engines as fitted to Pz. Kpfw III and IV but of far greater capacity. On the first 250 'Tiger' Ausf. E. they had the same engines as were mounted in the Panther D, differing only in details, mainly to do with

the mounting. For the remainder of production these engines were increased in capacity for a larger power output. These improved engines were also fitted to the Tiger B, and the Panther Ausf. A. and G.

Respective Battalions and Divisions to which the Tiger I Tanks belonged

The 501st Heavy The African Front; Tank Battalion

This battalion was despatched in 1943 to Tunisia together with the 10th Panzer Division in order to secure this already occupied but increasingly dangerous part of Africa. It was the Tiger tanks belonging to this battalion that decided the fate of the tank battle on the Faid Pass by the sheer power of their 88 mm guns. Every one of these Tigers was painted sand colour. On the turret a three-figure turretnumber, was shown while a black and yellow Tiger crest was drawn on the front and rear sides of the tank.



The Italian front: The Parachute Panzer Division, "Herman Göring"

It was the Tiger company of this division that intercepted the Yankee forces at the beach when the Allied troops landed on Sicily. It was also the Tiger tanks of this company that made a dramatic exchange of fire, so rarely warships. These Tigers were painted uniformly in sand colour.

The Russian front;

The following forces participated in the great offensive operation, "Zitadelle" (the kursk battle) in July, 1943.

O The 505th Heavy Tank Battalion

This battalion fought strenuously under the direct command of the 47th Panzer Corps of the 9th Army (commanded by Field Marshal Model), which advanced southward from Orel in the north to attack kursk. The Tigers in this battalion were painted either in overall sand colour, dark-grey or dark-grey finished with darkgreen spots.

O The 503th Heavy Tank Battalion This battalion fought under the direct command of the 3rd Panzer Corps of the Kempf Army (commanded by Gen. Kempf), which advanced northward from near Belgorod in the south in Ukraine.

The Tigers in this battalion were painted

as other tanks in the same battalion. O The 1st SS Panzergrenadier Division, "Leibstandarte"

The 2nd SS Panzergrenadier Division, "Dass Reich"

The 3rd SS Panzergrenadier Division,

"Totenkopf" The above three divisions formed the nucleus of the German forces that attacked southern Russia. To each of them, a Tiger company had been attached. These three divisions made up the 2nd SS Panzer Corps of the 4th Panzer Army (commanded by General Hotho). Tanks including the Tigers of those three divisions played a leading role in "the grand tank battle of Pokhorovka," the greatest tank battle ever held in the history of war.

These Tigers were painted in the same way as other tanks in those three divisons.

O The Panzergrenadier Division, "Gross Deutschland"

This division was an elite division of the National Defence Force (German Army) and belonged to the 48th Panzer Corps which together with the 2nd SS Panzer Corps formed the 4th Panzer Army. The division was a formidable division, having not only a Tiger company under its command but also a Panther (Pkw V) battalion just formed at the time. It advanced northward to Oboyan to back up and fight strenuously with the helpless 3rd Panzer Division.

Painting is the same as the Panzergrenadier Division.

The Tiger I tanks had been active primarily in an independent heavy tank battalion (Heeres Schwere Panzerabteilung) formation under the direct command of the Army Corps (Korps). The H.S.P. itself existed before the outbreak of the Russo-German war but the history of the H.S.P. with the Tiger I tanks at its nucleus had began in the autumn of 1942. The formation during the 1942-1943, period was as figure A (page 4).

During the 1944-1945 period, production of the Tiger I got on the right track and its war tactics were fully completed. With this progress, the Tiger H.S.P. was much improved in formation and increased in number. · By 1945, its number increased to 9 in the National Defence Force and 2 in the SS divisions. The formation at the time figure B (page 4).

However, since 1942 there existed several heavy tank companies (Tiger Kompanie, or Schwere Kompanie) as an exception to the above. These Tiger I companies such as the 8th (later, 9th) Company, were always attached to the 'elite' division of the National Defence Force and the SS

forces.

These elite divisions were as follows;

O The Parachute Panzer Division, "Hermann Göring" (under the direct commander of the Air Force)

O The Panzergrenadier Division, "Grossdeutschland" (the National Defence Force)

O The 1st SS Panzergrenadier Division, "Leibstandarte SS Adolf Hitler" (The SS forces)

O The 2nd SS Panzergrenadier Division, "Dass Reich" (The SS forces)

O The 3rd SS Panzergrenadier Division, "Totenkopf" (The SS forces)

A heavy company consisted of 14 Tiger I tanks. Also, during the 1944-1945 period, there was the Tiger-Goliath-Kompanie. This company consisted of 14 Tiger tanks and 36 wireless-controlled tanks, each with a self-destroying device. It could indeed be called a genuine heavy tank company,

PARTS

Parts, A

- 1. Upper gun turret
- 2. Gun turret, right side section 3. Gun turret, left side section
- 4. Rear panel
- 5. Gun turret upper tool box
- 6. Gun turret tool box
- 7. Auxiliary caterpillar

Parts, B

- 1. Machine gun muzzle
- 2. Tool box
- 3. Gun turret parts, (A)
- . Gun turret parts, (B)
- 5. Loading section parts. (A)
- . Loading section parts, (B)
- 7. Recoil guard board 8. Fender, (A)
- 9. Auxiliary caterpillar stopper
- 10. Exhaust pipe, (A)
- 11. Loading section, (A)
- 12. Loading section, (B)
- 13. Exhaust cover, (A)
- 14. Exhaust cover, (B)
- 88 mm gun shield
- 16. Rear fender, (A)
- 17. Rear fender, (B)
- 18. Air intake
- 19. Smoke discharger support, (A)
- 20. Smoke discharger support, (B)
- 21. Scoop, (large)
- 22. Periscope
- 23. Switch parts
- 24. Ventilator 25. Light
- 26. Smoke discharger 27. Pistol shooting window
- 28. Escape hatch hinge
- 29. Gunner's hatch handrail
- 30. Handrail
- 31. Rear hook
- 32. Front hook
- 33. Hinge for hatch, (A)
- 34. Hinge for hatch, (B)
- 35. Jack 36. Driver hatch
- 37. Wireless operator's hatch
- 38. Gunner's hatch
- 39. Wire-cutter
- 40. Axe
- 41. Crank
- 42. Hammer 43. 88 mm gun barrel, (A)
- 44. 88mm gun barrel, (B)
- 45. Exhaust pipe, (B)
- 46. Scoop, (small)
- Exhaust pipe, (C)
- 48. Air cleaner, (A)
- 49. Air cleaner, (B)
- 50. Air cleaner, (C)
- Air cleaner, (D)
- 52. Fender, (B) 53. Support stand
- 54. Direction change lever
- 55. Lever stopper

Parts, C

- 1. Clamp
- 2. Hatch arm
- MG holder 4. Machine gun
- Battery stopper
- . Commander's hatch
- 7. Hull stopper parts
- . Rear wheel cap
- 9. Wire rope Manifold
- 11. Road wheel, (A)
- 12. Road wheel, (B)
- Road wheel, (C)
- 14. Road wheel, (D) 15. Rear wheel
- 16. Sprocket wheel, (A)
- 17. Sprocket wheel, (B)
- 18. Road wheel cap

Parts, M

- 1. Battery receptacl. (A)
- 2. Battery receptacle metal. (B)
- Battery receptacle metal. (C)
- Terminal plug
- Switch metal. (A) Switch metal, (B)
- Hexagonal nut for Genecon
- Vis for Gear
- Vis for Motor
- 10. Vis for Switch
- 12.
- 13. Shaft
- 14. Rubber pipe

*Paint the parts while they are still on the runner as instructed. (Take good precautions against fire, as all paints are inflammable.)

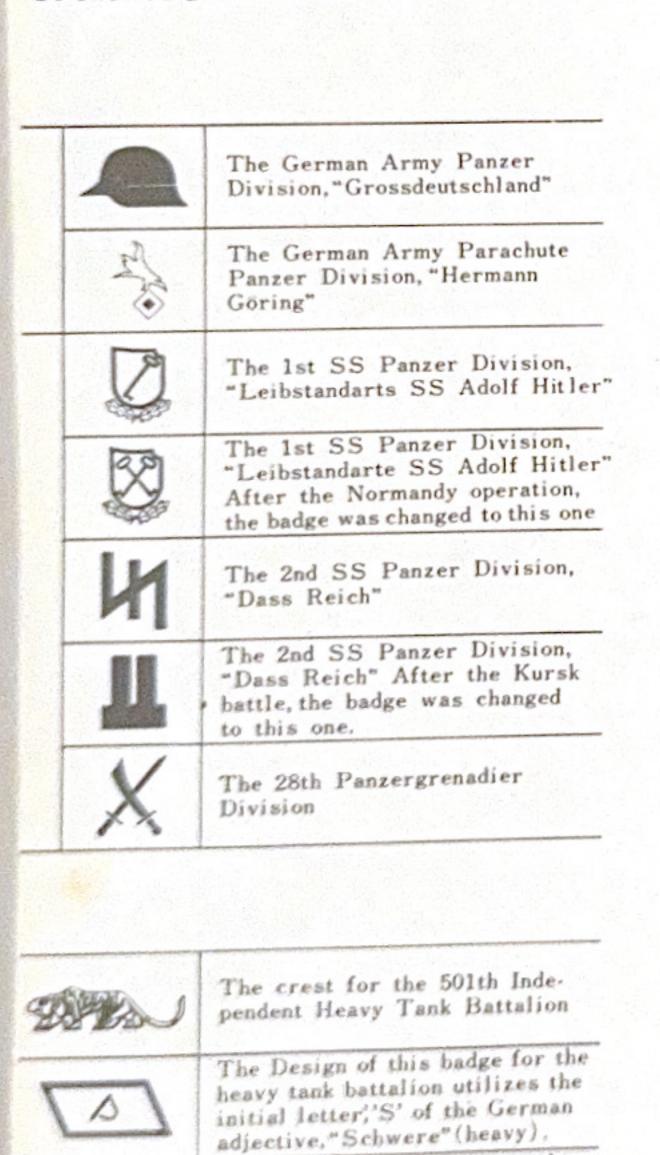
Colour of the German Tank

During the period from 1935 to February, 1943, the colour of all German military vehicles was a standardized grey except for those of the African front, which were painted in a combination colour of either yellow and light brown, or grey and green. As naturally expected, all these colours

were dull and matted ones.

Then, in 1942, both combination colours for the African vehicles were changed into a uniform brown-grey. Also, in the eastern front where these German tanks fought against the Soviet forces, winter white (of a grey tint) was used. On February 18. 1943 however, the German Central Command ordered and picked dark yellow as the standard colour for all military vehicles, discarding all the other ones so far used. But differently coloured vehicles continued to appear even after this standardization, as various combat forces kept spraying the following three combination-colour paints over the standard base colour to heighten camouflage effects to suit their respective fronts. The colours used for this purpose were olive-drab (colour of the U.S. forces), red-brown (dark-brown mixed with red), and dark-yellow (standard colour).

The painting was done either in large spots or stripe formations or by means of spraying all over, using freely those three colours. And any one of these painting method and free use of those colours continued to be allowed until the end of the World War II.



The badge for the heavy tank battalion that was a change at

The kill-marks drown on the gun barrel of Wittman's Tiger

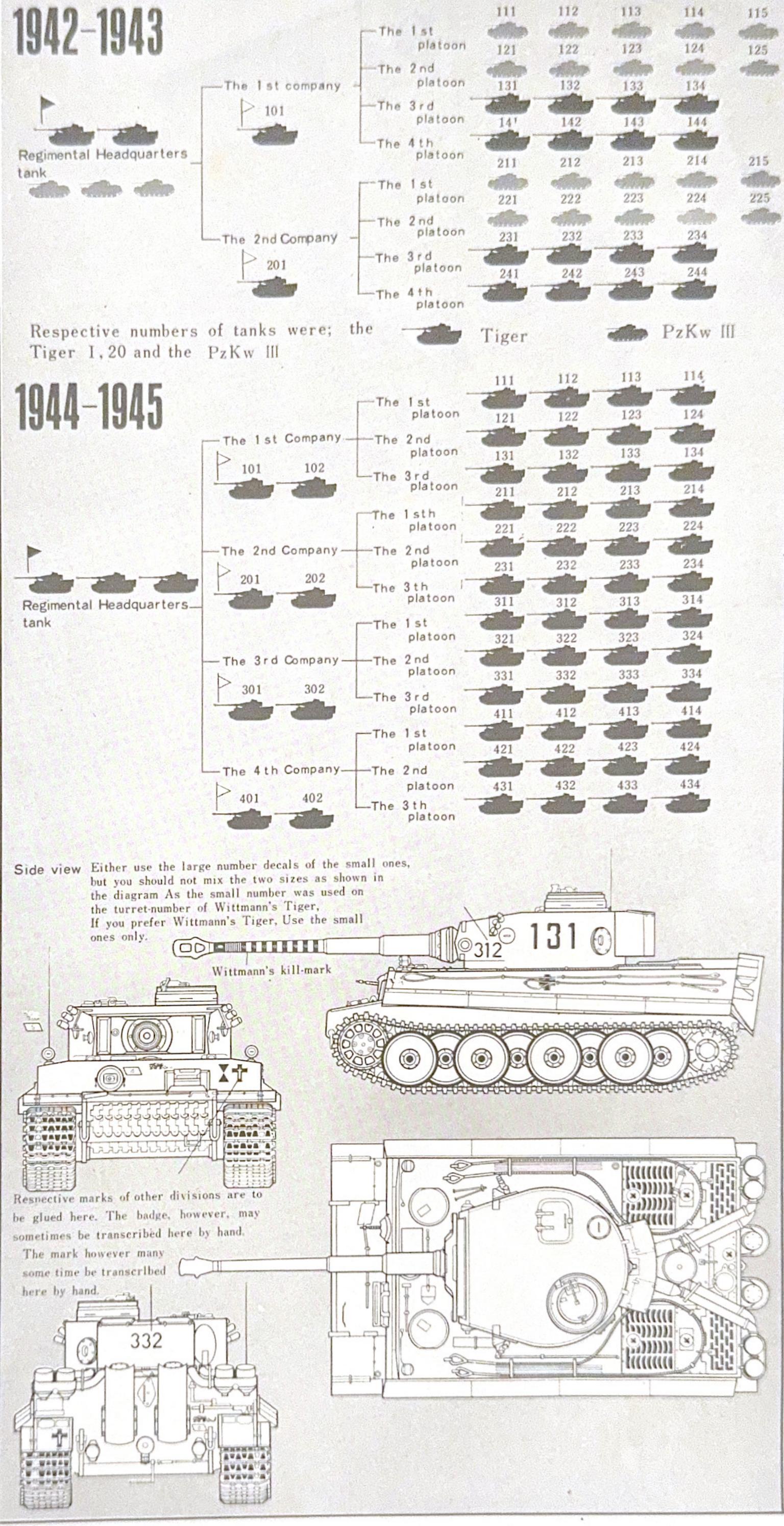
which destroyed 88 enemy tanks.

The badge for the British 1st

the time of the Normandy

Army.

operation





*Don't start your assembly work in haste but be sure to read the following instructions and diagrams carefully beforehand.

*When painting, do an easier job and paint the smaller parts while they are still on the runner.

* Have a small screwdriver, tweezers, a knife, cellotapes, etc., handy.

Fig. 1 Fixing of Pinion Gear and Metals

*Drive Shaft of the Motor RE26 into

Pinion Gear with 2mm gap in between.

*Change of speed can be effected
either by changing the type of Pinion
Gear or the number of batteries employed as shown in Fig. 3.

*Wind celotapes around the connecting part of Motor Cord and 10cm Cord.

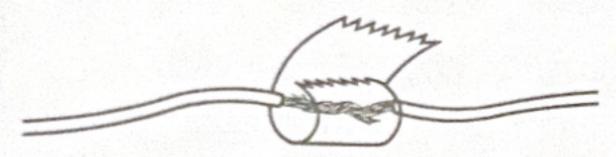


Fig. 2 Fixing of Gearbox and Metals

*Fix and fasten Motor inside Gearbox
with Vis, M9, and then fasten the whole
inside Lower Hull with Vis, M8.

★ Bend claws of four Battery-Receptacle-Metals as shown in the figure and fix each Metal onto Lower Hull.

Construction of Switch

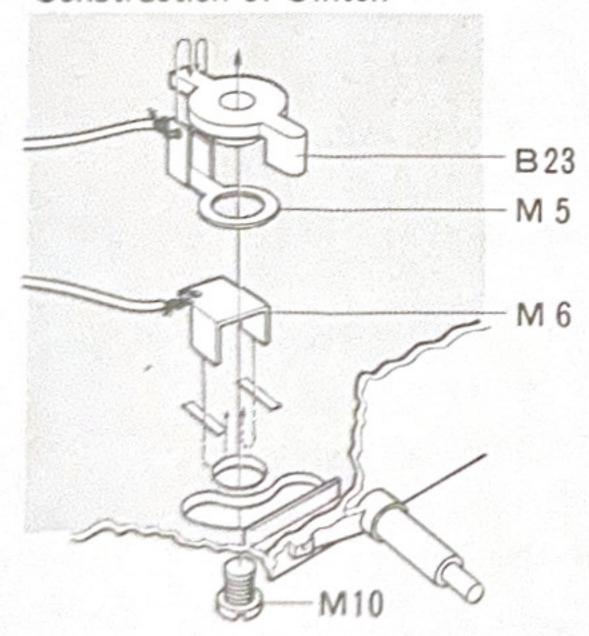


Fig. 3 Change of Speed

① A pinion gear with many teeth results in high speed but decreased climbing power.

2 Other pinion gear with small number of teeth will enhance low speed but increased climbing power.

*When Metal, M4, is inserted between Lower Hull and Battery-Receptacle-Metal, both speed and climbing power can be changed in three different stages.

Fig. 4 Construction of Lower Hull *First, fully glue four Air Cleaners, (B48, B50, B49 and B51) onto Rear Panel, A4. Then, onto this whole, glue Exhaust Pipe and Covers, B13 and B14.

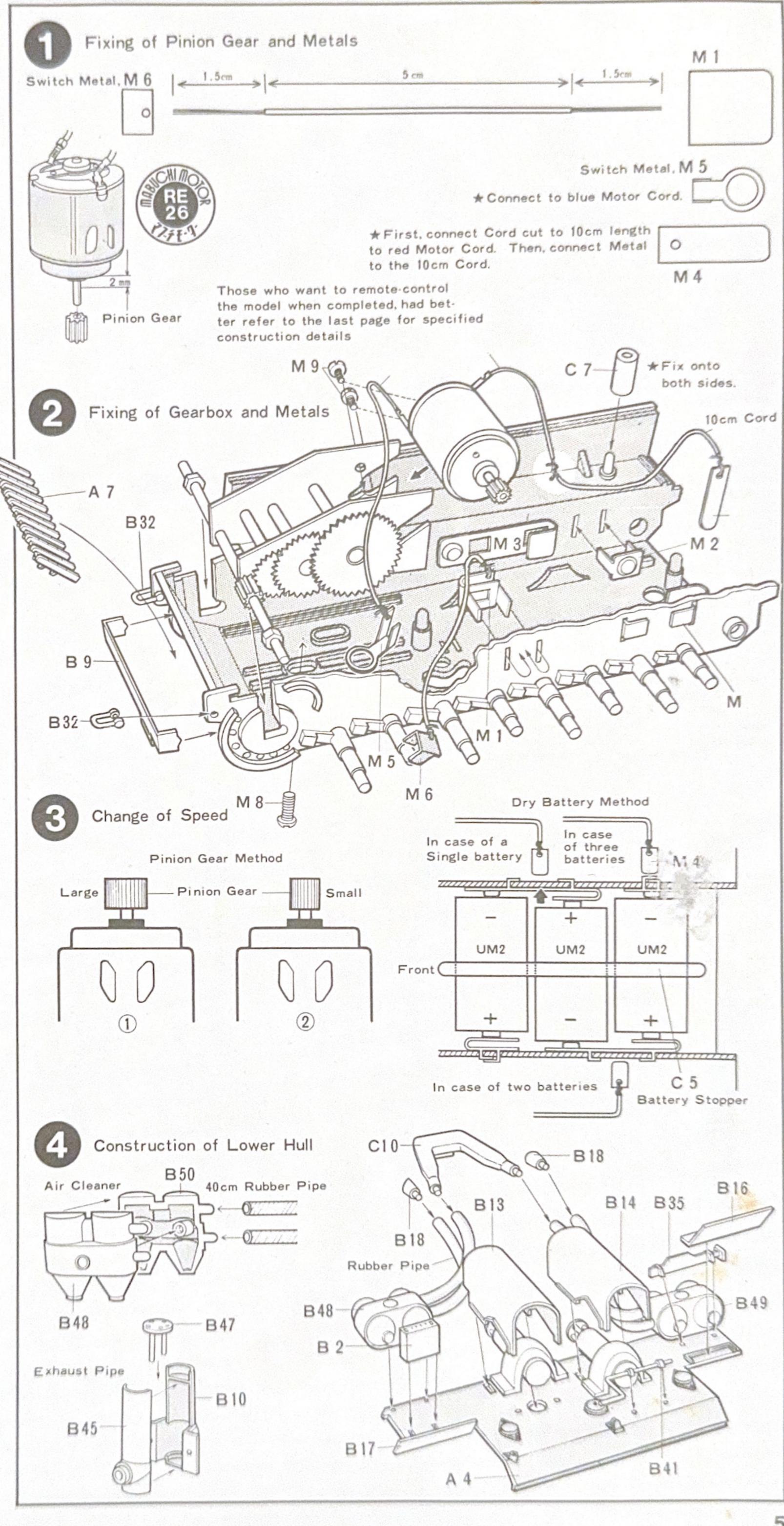


Fig. 5 Construction of Lower Hull

*No adhesives should be used in constructing wheels.

*First, pass Rear Shaft, M13, through Hull.

*Construct Wheels as shown in the figure. In so doing. Sprocket Wheels should be fixed onto Lower Hull after they have been fully constructed.

*Glue Rear Panel, which has already been constructed in Fig. 4, onto Rear Hull. Hook, B31, should just be fixed but not glued.

Fig. 6 Linking of Caterpillar Parts

*Pass each pin of one Caterpillar

Parts through respective holes of other one. Then, flatten the pin head that comes out of the hole with the hot-end of a driver to secure the linkage.

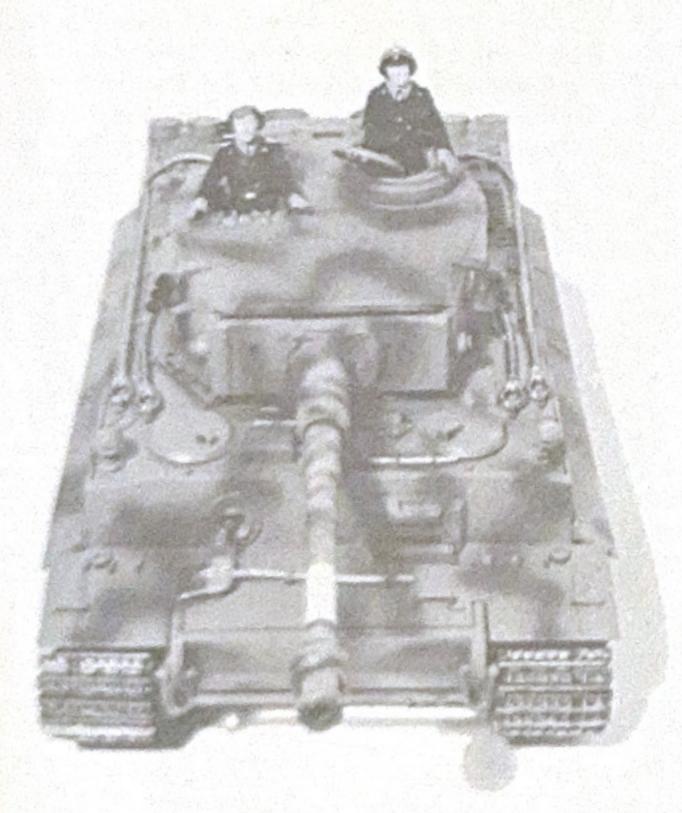
PAINTING

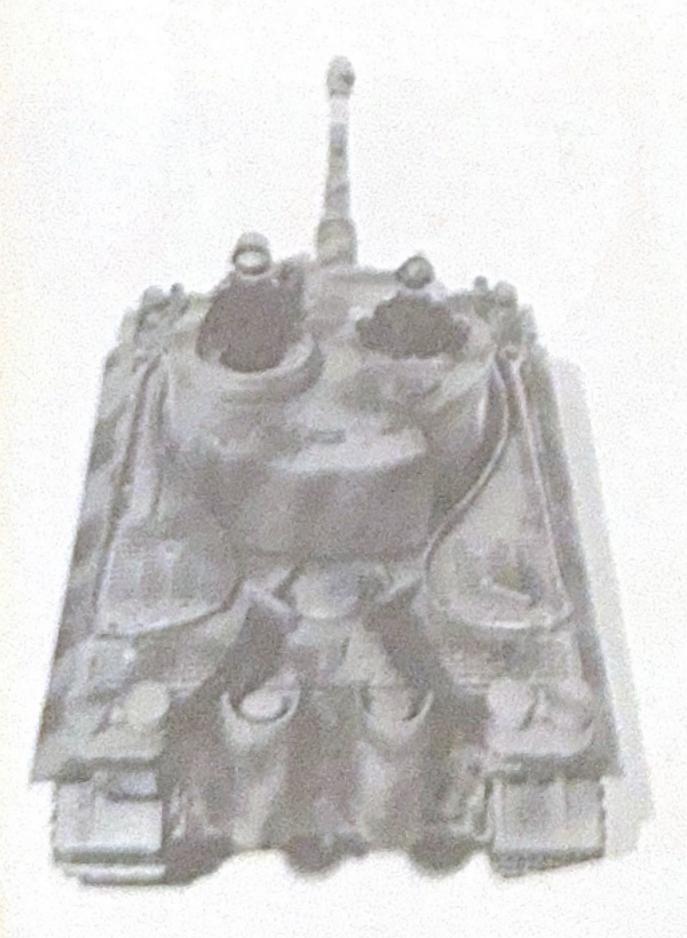
Teeth of Sprocket Wheels should be painted in silver, while the rubber materials around Road Wheels, in matted black.

Fig. 7 Construction of Gun Barrel and Gun Barrel Loading Section

PAINTING

That part which corresponds to Gun Barrel Loading Section in the original tank should be painted in white while the slant-lined part in the figure, in copper colour.





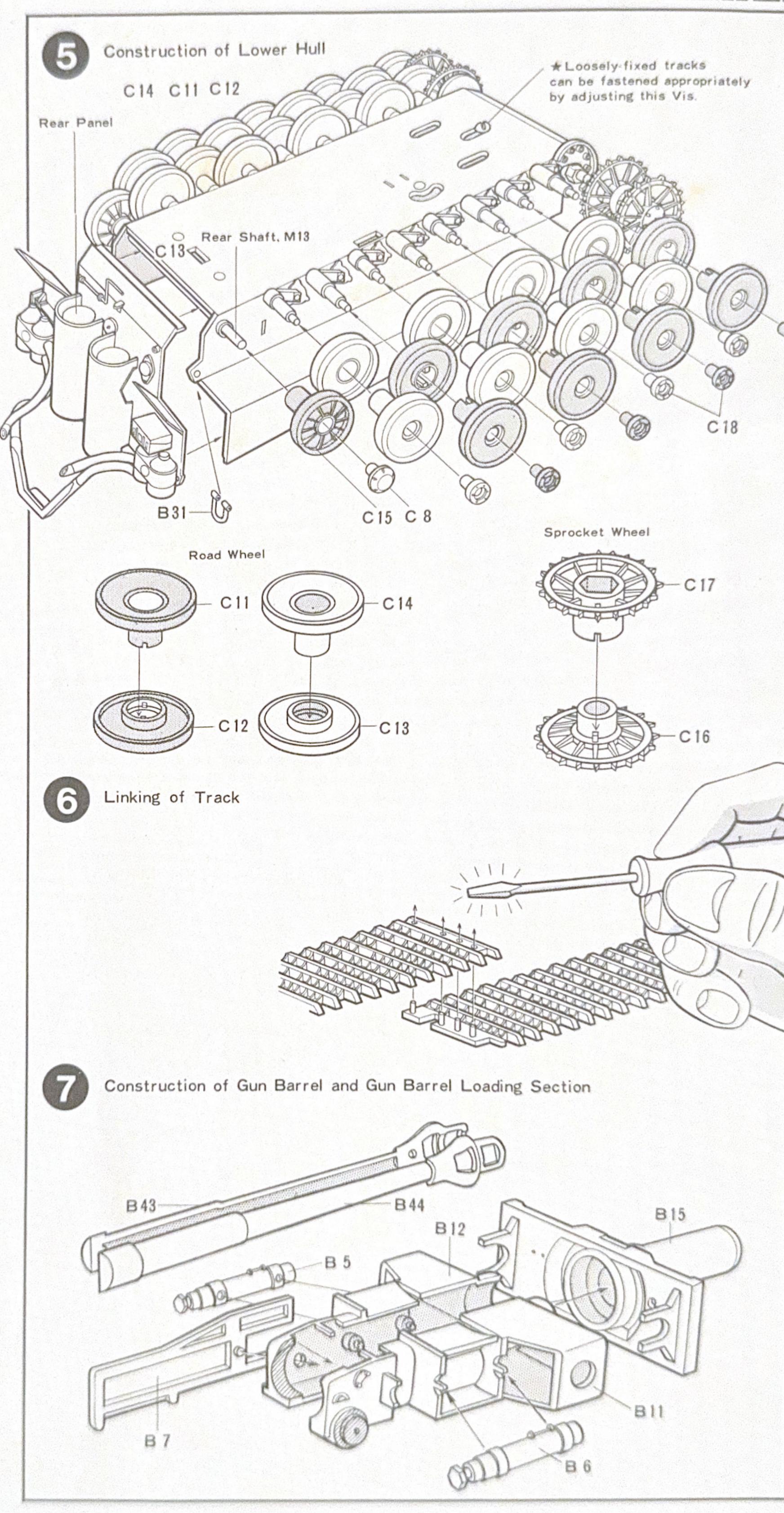


Fig. 8 Construction of Gun Turret, A Caution: Plase note that respective rear parts of right and left Gun Barrels have different lengths.

Fig. 9 Construction of Gun Turret, B * When gluing Gunner's Hatch, B38, do it either in an opened or closed state according to your preference.

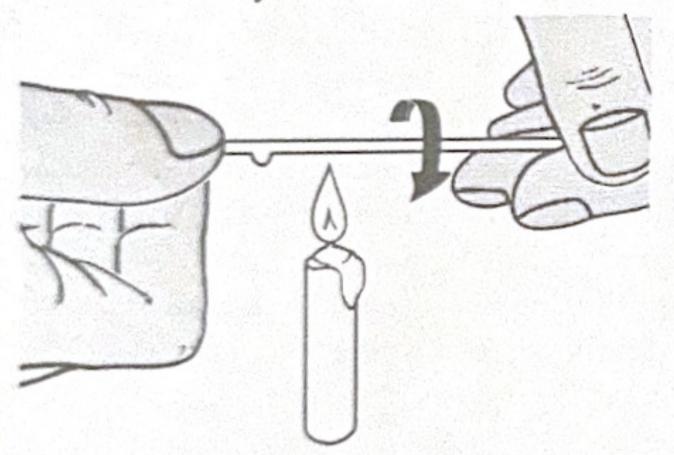
★ Fix but not glue Commander's Hatch onto Gun Turret by inserting its both pins by turns into the latter's holes.

OPAINTING

Those parts including Hatch that go together to form the inside of Gun Turret should all be painted in white, while Knob and Handle at the backside of Hatch, in iron colour.

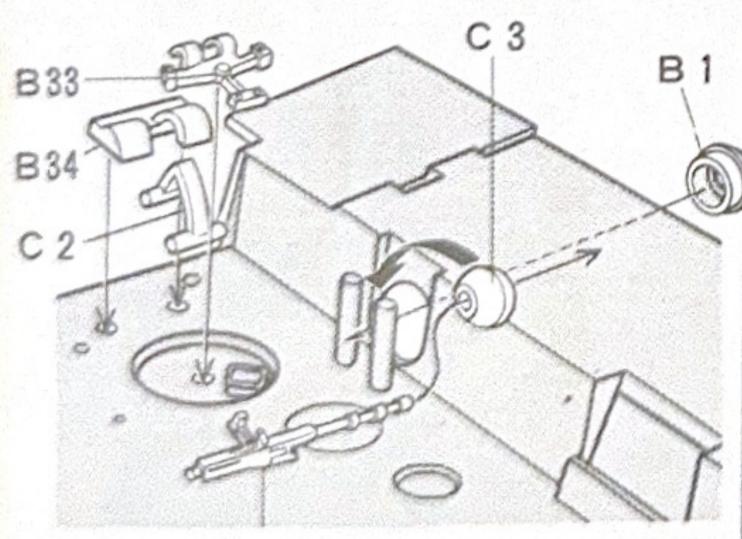
Fig. 10 Construction of Upper Hull Construction of Antenna

*Cut off any one of runners on which various parts have been attached. Pull it both sideways while warming it over a candle fire so that it will become slender and elongated. Cut it to a suitable length and you will have an antenna ready for use.



The Back View of Upper Hull

★ Take good care so that no adhesives overflow onto Hatch Hinge.



*First, construct Machine Gun without Muzzle. Then, pass the MG so constructed through the hole in Upper Hull. Lastly, glue MG Muzzle, B1, onto MG.

PAINTING

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Parts, B39, B40, B46 and B42, should be painted in iron colour while Antenna, in silver and MG, in iron colour.

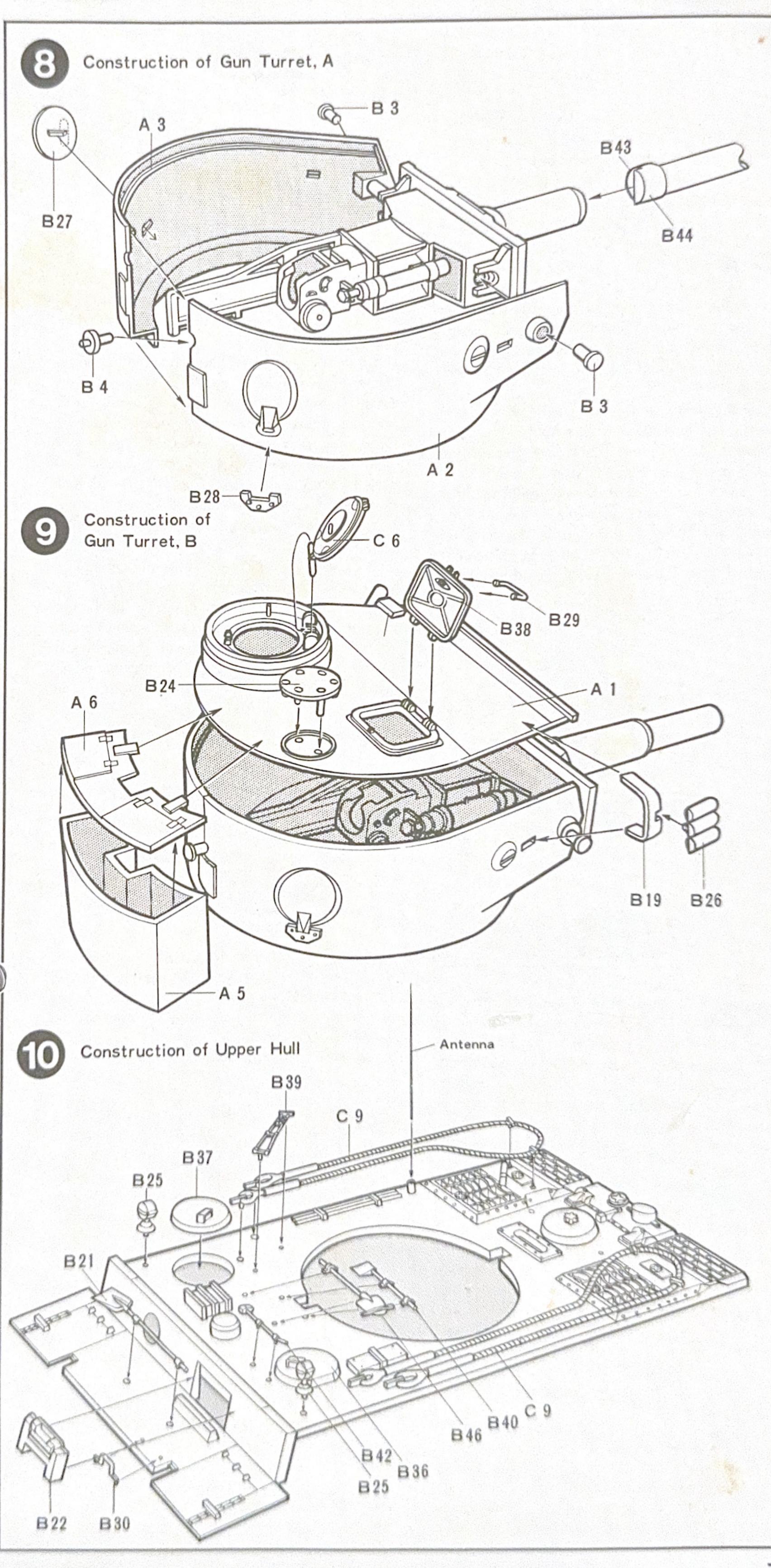


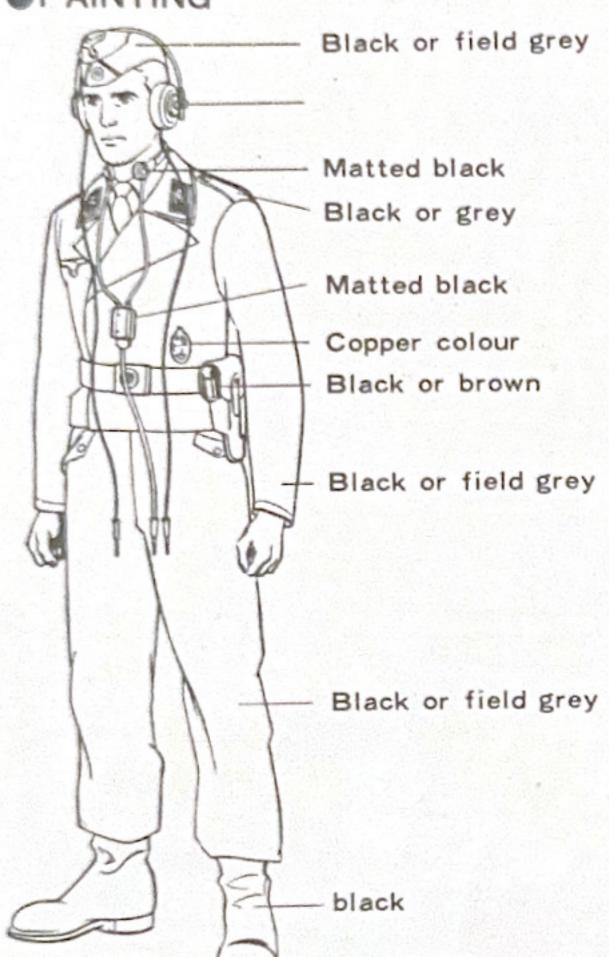
Fig. 11 Construction of Main Body

**Glue each of Fender Skirts, B8 and
B52, onto right and left sides of Lower
Hull.

*When fixing Upper Hull onto Lower Hull together, first, fix each notch in the former into hooks of the latter. Then, fix each pin of the former into Parts, C7, in the latter and secure Manifold, C10, in the arrowed place as shown in the figure. Lastly, fasten two Pipes with Pipe Stopper, C1. When replacing batteries inside Hull, reverse the process above.

★ Construct Dummies and fix them onto Gun Turret. Then, turn Gun Turret right to 90 degrees to fix it onto Upper Hull by utilizing Hinge in Upper Hull and you will have the model completed.

PAINTING



1/35th SCALE TANK SERIES

PANTHER German Tank

R/C -ditto
JAGD PANTHER German Tank

R/C -ditto
COVENTRY British Armoured Car

SCORPION Swiss Tank Destroyer

SALADIN British Armoured Car

M8 GREY HOUND U.S. Armoured Car

M-36 B2 BUFFALO Tank Destroyer

T-10 STALIN Russian Tank

R/C -ditto
CHIEFTAIN British Tank

M41 WALKER BULLDOG U.S. Tank

R/C -ditto
T-34 Russian Tank

A.M.X. 105 ARCHERY French Tank A.M.X.D.C.A.30 French Army

SU-100 Russian Assault Gun R/C -ditto-

A.M.X.30 NAPOLEON French Tank

R/C -ditto-T-55 Russian Tank

R/C -ditto-

M4 SHERMAN U.S. Tank KING TIGER German Heavy Tank

R/C -ditto-

HUNTING TIGER German Heavy Tank

R/C -ditto-

LEOPARD German Tank

R/C -ditto-

